


## Oakland Schools Early Childhood Team

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### Building Children's Brains

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## What We Know

The experiences that fill babies' first days, months, and years, have a decisive impact on the architecture of their brains and the nature and extent of their adult capacities.



Lawton and Rhea Chiles Center for Healthy Mothers and Babies

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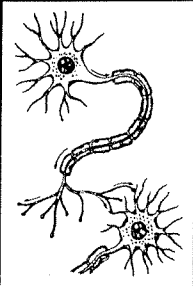
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## Neurons: The building blocks



- Born with 100 billion
- Waiting to connect
- Cell body, axon, dendrites, and synapses

Center for Educational Enhancement and Development

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**What We Know**

- Experiences that work best to build brains
  - ◆ Involve Stimulation
  - ◆ Actively involve children
  - ◆ Provide choice
  - ◆ Supply appropriate challenge

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**Synaptic Activity**



**Enriched Neuron**



**Impoverished Neuron**

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**What We Know**

- 85% of brain development occurs before children reach kindergarten

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## Synaptic Density in the Human Brain



At Birth    6 years old    14 years old

Drawings supplied by H.T. Chugani  
Provided by Joan Firestone

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## What We Know

- Emotional connections strongly influence brain development
  - Positive connections supercharge learning
  - Negative connections prevent learning

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## Normal Brain Development



Source: *Newsweek* Special Edition, 1997

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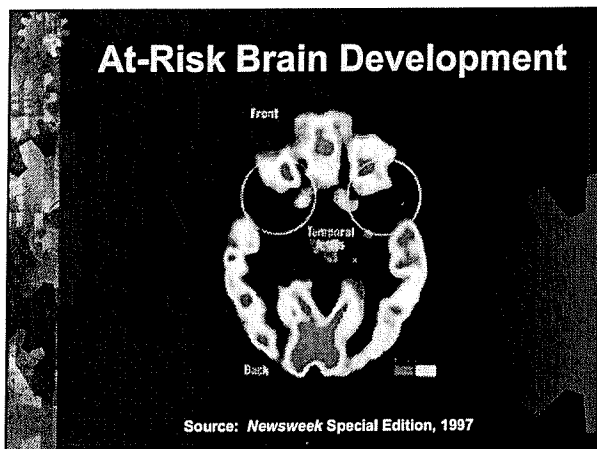
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Source: Newsweek Special Edition, 1997

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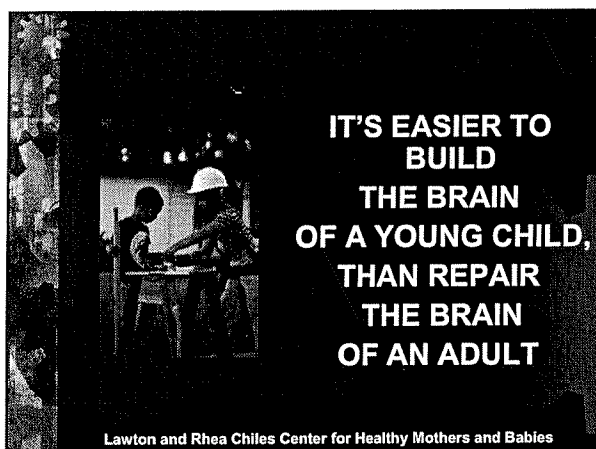
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**IT'S EASIER TO  
BUILD  
THE BRAIN  
OF A YOUNG CHILD,  
THAN REPAIR  
THE BRAIN  
OF AN ADULT**

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